Extron® Electronics
INTERFACING, SWITCHING AND DISTRIBUTION

User's Guide

DVI 104 Tx/Rx

DVI Fiber Optic Extender

68-1549-01
Rev. C
10 08

Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

安全须知 • 中文

这个符号提示用户该设备用户手册中有重要的操作和维护说明。

这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必须使用有地线的供电系统供电。 第三条线（地线）是安全设施，不能不用或跳过。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线， 避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。 不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。 必须使用与厂家推荐的相同或相近型号的电池。 按照生产厂的建议处理废弃电池。

声明

所使用电源为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. The Class A limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

NOTE *This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance with FCC emissions limits.*

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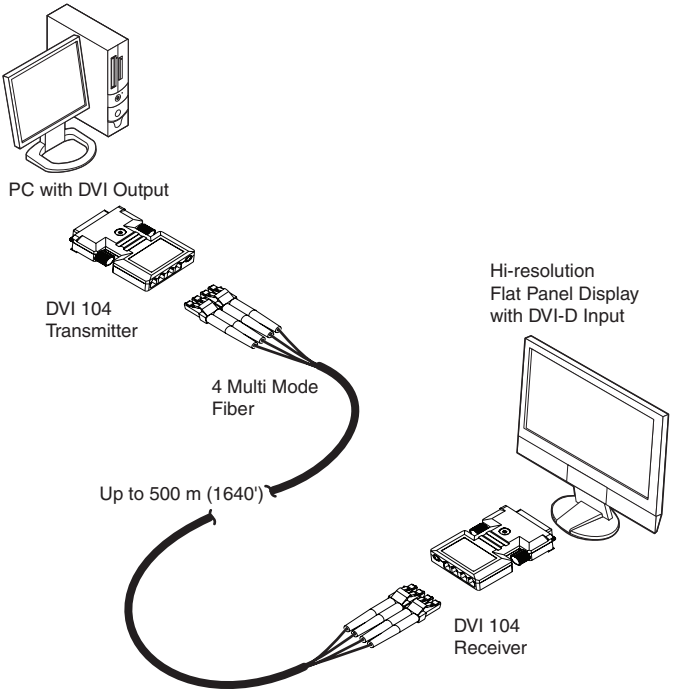
Description

The DVI 104 Tx and DVI 104 Rx are fiber optic transmitter/receiver units that extend DVI signals up to 1,640' (500 m) using four multimode fiber optics cables.

The transmitter plugs directly into the source device and the receiver plugs directly into the display device.

The transmitter/receiver pair can handle DVI video signals with resolutions up to 1920 x 1200 or 1080p @ 60 Hz.

Optional four-fiber multimode cables are available in varying lengths.



Features

Power Supply — Separate power supplies are provided for both the transmitter and receiver.

Power LEDs — The LEDs are on the top and bottom panels of both the receiver and transmitter. They illuminate blue when the unit is receiving power.

No mounting hardware required — The units plug directly into the source device (transmitter) or output device (receiver) and take up very little space.

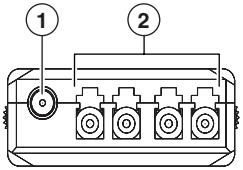
EDID Minder — The DVI 104 transmitter is able to capture and store the display device's resolution and refresh rate, which ensures that the source boots up with the correct resolution.

Long cable runs — The DVI 104 Tx/Rx uses four fiber optic cables to extend video signals up to 1640' (500 m). The cables must be either 62.5/125 multimode cable or 50/125 multimode cable.

High resolution signal transmission — The units transmit signals at resolutions up to 1920 x 1200 or 1080p @ 60 Hz.

High rate of data transfer — The units can transmit signals at up to 1.65 Gbps

Front panel features



① **Power input** — The transmitter and receiver both have plugs for a 3.5 mm jack to provide 5 VDC to the unit.

The center pin of the jack carries +5 VDC; the outer shell of the jack is the negative rail.

NOTE *If the source device is able to provide 5 VDC on pin 14 of its DVI output, the transmitter can draw power from the source device. If the source is a laptop or a PC using a PCI-E graphics card, it will not be able to provide enough power and the transmitter must be powered with a separate external power supply.*

The receiver must be powered by an external power supply through the power input plug.

② **LC Jacks** — Four fiber optic cables connect the transmitter to the receiver. The cables connect to the four female LC jacks in each of the units.

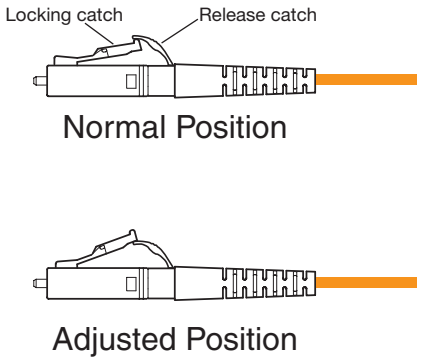
A label on the top panel identifies the unit as the transmitter or receiver and identifies the fiber optic port numbers and the power input.

NOTE *For the transmitter, port 1 is closest to the power input and port 4 is furthest away. For the receiver, port 4 is closest to the power input and port 1 is furthest away.*

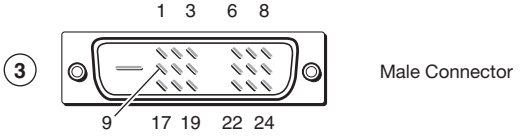
Although the orientation is reversed, ports with the same number must be connected by the same cable, so that port 1 on the receiver is connected to port 1 on the transmitter, etc.

Insert the end of the fiber optic cable into the appropriate plug on the transmitter or receiver. The locking catch should snap into the slot and hold the cable securely in place.

If the cable is loose or slips out of the slot easily, move the release catch from its normal position above the locking catch, to the adjusted position under the locking catch (see the figure below). This provides the extra leverage required to keep the locking catch in place and hold the cable securely.



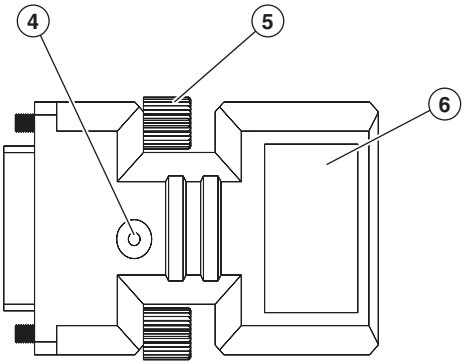
Rear panel features



③ A single-link DVI-D male connector is used to connect the transmitter to the source and the receiver to the output device.

Pin	Signal	Pin	Signal	Pin	Signal
1	TMDS data 2-	9	TMDS data 1-	17	TMDS data 0-
2	TMDS data 2+	10	TMDS data 1+	18	TMDS data 0+
3	TMDS data 2 shield	11	TMDS data 1 shield	19	TMDS data 0 shield
6	DDC clock	14	+5 V power	22	TMDS clock shield
7	DDC data	15	Ground (+5V)	23	TMDS clock+
8	CEC control	16	Hot plug detect	24	TMDD clock -

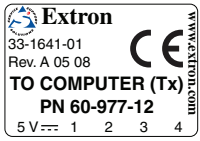
Top panel features

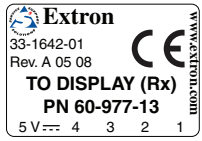


④ **LED** — Both the transmitter and receiver have LEDs on the top and bottom panels that light blue when the unit is receiving power. The LEDs on the transmitter also functions as a status indicator for the EDID minder feature (see "Setup and Operation").

⑤ **Thumbscrews** — Use the thumbscrews to secure the transmitter or receiver to its connector.

⑥ **Label** — a label on the top panel identifies the unit as the transmitter (Tx, left panel of the figure below) or receiver (Rx, right panel of the figure below) and also identifies the fiber optic port numbers and the power input.

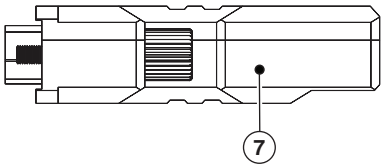




Bottom panel features

The bottom panels of both the transmitter and receiver have a label that identifies the unit's serial number. There is also a second power LED that mirrors the signals given by the LED on the top panel.

Side panel features (transmitter only)



⑦ **EDID Minder storage button (transmitter only)** — A recessed switch activates the transmitter to capture and store EDID information from the display device. This allows the source device to provide a signal with a resolution and refresh rate matching the needs of the display device. (For more information, see the next section, "Setup and Operation".)

Setup and Operation

When using the DVI 104 Tx/Rx for the first time or if the display device is changed, it is essential to set up the EDID Minder. The setup process places EDID information on a EEPROM chip in the transmitter, which allows the video source to boot up correctly. This process is described below in **steps 1-6**. If you have already set up the EDID Minder, proceed to **step 7**.

1. Ensure that the source, the display, the transmitter, and the receiver are all powered off and that the fiber optic cables are unplugged from the transmitter and the receiver.

2. Apply power to the transmitter by inserting the cable from the external power supply into the input jack. The LEDs should illuminate a solid blue.

3. Press and release the EDID Minder programming button by gently inserting a pointed device, such as a paper clip, into the recess on the side of the transmitter. The blue LED should blink twice and turn off, although power is still connected. The transmitter is ready to capture EDID information from the display device.

4. Power on the display device.

5. Connect the transmitter directly to the DVI input of the display device. The blue LEDs on the transmitter blink rapidly for a few seconds to indicate that it is reading and storing EDID information from the display device.

   When the information has been captured and stored, the blue LEDs stop blinking. They may light a solid blue or they may turn off, depending on the display device.

NOTE *The transmitter must remain connected to both the display device and the power supply for the entire time that the EDID capture is taking place*

6. Once the capture and storage are complete and the blue LEDs are no longer blinking, disconnect the transmitter from both the power and the display device.

NOTE *Once the transmitter has captured the EDID information from the display device, the information is stored on an EEPROM chip in the transmitter. Therefore, this calibration needs to be performed only once, as long as the display device is not changed.*

***If the display device is changed**, repeat steps 1-6 to capture and store the EDID information for the new device.*

7. Apply power to the receiver by inserting the cable from the external power supply into the input jack. The LEDs should illuminate a solid blue.

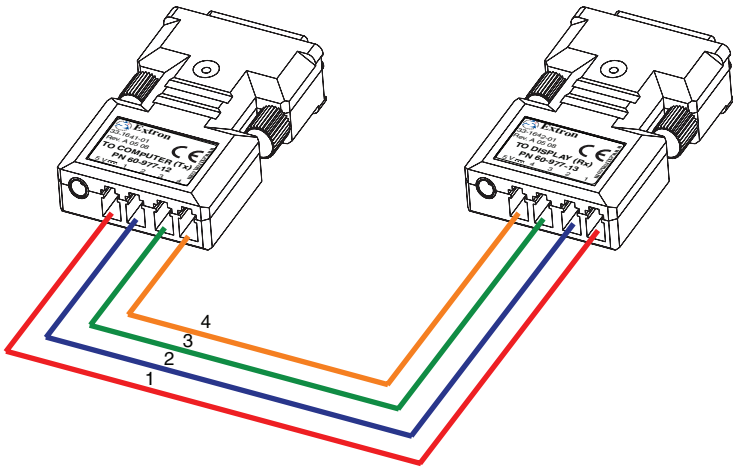
8. Ensure that the display device is still powered on, connect the receiver directly to the DVI input, and tighten the thumbscrews.

9. Ensure that the PC or source is powered off, connect the transmitter directly to the DVI input, and tighten the thumbscrews.

10. If required, apply power to the transmitter by inserting the cable from the external power supply into the input jack. The LEDs should illuminate a steady blue.

NOTE *If the PC or source is able to provide 5 VDC on pin 14 of its DVI output, the transmitter can draw power from the source device. If the source is a laptop or a PC using a PCI-E graphics card, the source device cannot provide enough power and the transmitter must be powered with a separate external power supply.*

11. Connect all four fiber optic cables between the transmitter and receiver. Pay attention to the orientation of the LC connectors and ensure that each cable joins ports with the same number (port 1 of the transmitter must be connected to port 1 of the receiver, etc.)



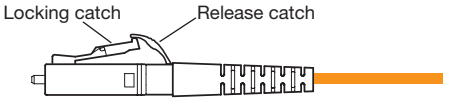
12. Turn on the source device. The source device should read the information stored in the transmitter and boot up to that resolution and refresh rate.

Trouble Shooting

Display does not show an image

- Ensure that all plugs and jacks used by the external power supplies are firmly connected.

  If the cable is loose or slips out of the slot easily, move the release catch from its normal position above the locking catch, to the adjusted position under the locking catch (see the figure below). This provides the extra leverage required to keep the locking catch in place and hold the cable securely.



Normal Position

Adjusted Position

- Ensure that the blue LEDs for both the transmitter and receiver are on.
- Ensure that the correct EDID information has been stored on the transmitter's EDID Minder. When using the DVI 104 Tx/Rx for the first time or if the display device is changed, it is essential to set up the EDID Minder as described in **steps 1-6** of "Setup and Operation" on page 6 of this manual.
- Ensure that the source device and output device are powered on and have booted correctly.
- Ensure that the fiber optic cables are connecting the correct ports. A port on the transmitter must be connected to the same numbered port on the receiver. For example, port 1 of the transmitter must be connected to port 1 of the receiver.
- Ensure that the fiber optic cable jacks are securely seated.

- Ensure that the transmitter is firmly plugged into the source device and the receiver is firmly plugged into the output device.
- Try resetting the system by unplugging and reconnecting the DVI connectors or the power jacks.
- Try rebooting the computer.

Screen is distorted or displays noise

- Ensure that the cable length does not exceed 1,640' (500 m).
- Ensure that the cables are high quality multimode cable and are terminated with securely fitting plugs.
- Ensure that the graphic resolution is correctly set (see "Setup and Operation").
- View the "Display Properties" of the source device to check the output resolution. The resolution and refresh rate must match the capabilities of the display device and must not exceed 1920 x 1200 at 60 Hz.
- Try resetting the system by unplugging and reconnecting the DVI connectors or the power jacks.

Specifications

NOTE *The DVI 104 TX/RX consists of a transmitter (DVI 104 TX) and a receiver (DVI 104 RX) with fiber optic cables linking the two units.*

NOTE *These transceivers are Class 1 laser products. They meet the safety regulations of IEC-60825, FAD 21, CFR 1040.10, and FDA 21 CFR 1040.11.*

Optical fiber interconnection between transmitter and receiver

Number/type	4 fiber optic, multimode
Connectors	4 female LC connectors
Operating Distance	Up to 1,640' (500 m)

Video

Gain	Unity
Maximum data rate	4.95 Gbps (1.65 Gbps per color)
Maximum pixel clock	165 MHz
Resolution range	Up to 1920x1200 or 1080p at 60 Hz
Formats	RGB and YCbCr digital video
Standards	DVI 1.0

Video input (transmitter)

Number/signal type	1 single link DVI
Connectors	1 male DVI-D

Video output (receiver)

Number/signal type	1 single link DVI
Connectors	1 male DVI-D

General

Power	Supplied by an external power supply or by the source device's 5 VDC output on pin 14 of a DVI connector
External power supply	100 VAC to 240 VAC, 50/60 Hz, external, to 5 VDC, 4 A, regulated
Power input requirements	5 VDC, 0.1 A
Temperature/humidity	Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, noncondensing Operating +32° to +122°F (0° to +50°C) / 10% to 90%, noncondensing

Cooling	Convection, no vents
Mounting	
Rack mount	No
Furniture mount	No
Enclosure type	Plastic
Enclosure dimensions	0.6" H x 1.5" W x 2.3" D (1.5 cm H x 3.9 cm W x 5.9 cm D) (Depth excludes DVI connector.)
Product weight	0.7 lbs (0.3 kg) per TX/RX pair
Shipping weight	1 lb (<1 kg) per TX/RX pair
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory Compliance	
Safety	CE, C-tick
EMI/EMC	CE, C-tick, FCC Class A, FDA Class 1, ICES, VCCI
Environmental	Complies with the appropriate requirements of RoHS
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE *All nominal levels are at ±10%.*

NOTE *Specifications are subject to change without notice.*

Parts

Included parts

Included Parts	Replacement part number
DVI 104 Tx/Rx	60-977-01
DVI 104 Tx	60-977-12
DVI 104 Rx	60-977-13
(2) 5 VDC Power Supply	
DVI 104 Tx/Rx User's Guide	

Fiber optic cables

Accessories	Part number
4-fiber MM LC-LC - 10 m (33')	26-652-01
4-fiber MM LC-LC - 20 m (66')	26-652-02
4-fiber MM LC-LC - 30 m (98')	26-652-03
4-fiber MM LC-LC - 40 m (131')	26-652-04
4-fiber MM LC-LC - 50 m (164')	26-652-05
4-fiber MM LC-LC - 60 m (197')	26-652-06
4-fiber MM LC-LC - 70 m (230')	26-652-07
4-fiber MM LC-LC - 80 m (263')	26-652-08
4-fiber MM LC-LC - 90 m (295')	26-652-09
4-fiber MM LC-LC - 100 m (328')	26-652-10
4-fiber MM LC-LC - 200 m (656')	26-652-11
4-fiber MM LC-LC - 300 m (984')	26-652-12

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1001 East Ball Road
Anaheim, CA 92805, USA

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Asia:

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Japan:
Extron Electronics, Japan
Kyodo Building
16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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